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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,471	10/27/2000	Arkady Pittel	11627-002001	6581

26161 7590 01/17/2003

FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 01/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/698,471

Applicant(s)

PITTEL ET AL.

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-122 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims withdrawn from consideration are 5,7,9,10,12,13,15-26,40-45,47,49,54-58,62,64,68,71,78,80,81,85-100,103,105,109,111-122 and 3037.

Continuation of Disposition of Claims: Claims rejected are 1-4,6,8,11,14,27-29,38,39,46,48,50-53,59-61,63,65-67,69,70,72-77,79,82-84,101,102,104,106-108 and 110.

DETAILED ACTION

This Office Action is in response to Applicant's election mailed on September 30, 2002. A phone call with Mr. David Feigenbaum (Applicant's representative) to clarify the election where some of the claims (36-37) were improperly elected. Accordingly; Applicant's representative agreed withdraw claims 36-37 from consideration. Applicant also agreed to have the claims added by the preliminary amendment (claims 113-122) to be withdrawn from consideration. In conclusion; the examined claims are 1-4, 6, 8, 11, 14, 27-29, 38-39, 46, 48, 50-53, 59-61, 63, 65-67, 69-70, 72-77, 79, 82-84, 101, 104, 106-108 and 110.

Information Disclosure Statement

1. The references cited in the Information Disclosure Statement filed May 01, 2002 have been considered by the Examiner; see attached PTO-1449.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 14, 27-29 and 38 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Many claims include minor errors or indefinite language. For example, claim 3 recites "the optics" is indefinite because it is not defined in claim 1, claim 14, recites "based on other than dimensional effects", the citation of "other than" is indefinite, claim 27, a period "." In the middle of the claim is inappropriate,

claim 29, the recitation of "the corresponding sensor" is indefinite because it is not clear what is the corresponding sensors are referring to, claim 38 recites "the other element" is indefinite. Other errors may exist and was not detected by the Examiner. Corrections are respectfully requested.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 104 and 106 are rejected under 35 U.S.C. 102(e) as being anticipated by Curry (US patent NO. 6,055,552).

Curry (figure 1) teaches an apparatus that includes a sensor (digitizer section 13) configures to detect light from a moving writing instrument (stylus 15), and a clip (11) for

clipping paper (14) on which writing instrument is to be moved to the sensor (col. 5, line 53 through col. 6, line 14).

As to claim 106, Curry teaches a mechanism (21) for enabling a user to cause the clip to grip or to release the paper (col. 6, lines 1-15).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 8, 11, 14, 27-29 and 83-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (US Patent NO. 6,441,362).

As to independent claim 1, Ogawa (figures 1-2) teaches a method that includes conveying light from a moving light source (stylus 2) on the writing instrument (coordinate plane 1) as an indication of the location and path of the writing instrument on a two dimensional writing surface (col. 6, lines 45-55), sensing the light at two or more sensors (left-hand and right-hand detectors 3L and 3R) and generating a sequence of signals representative of the sensed light (col. 7, lines 13-42).

Ogawa does not expressly teach applying a technique to increase the stability of sub-pixel reading.

However, Ogawa teaches that each of the detecting units 3L and 3R incorporates collimator means for limiting a view field of the detecting unit to a

predetermined width in the vertical direction from the coordinate plane 1 to make a range of receivable projected light parallel to the coordinate plane 1, and a shield means in a form of a shield frame 4 is arranged to enclose a periphery of the coordinate plane 1, the shield frame 4 being wide enough in a vertical direction for blocking undesired noise light. (Col. 6, line 67 through col. 7, line 12). Having such shield is considered to be a technique for increase the stability of reading.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that Ogawa's teaching of having a shield is considered to be a technique for increasing the stability of sub-pixel (by reducing the reading noise) so as motivated by Ogawa, to provide an optical digitizer capable of operating with stability without being affected by extraneous light (col. 2, lines 45-48).

As to claim 2, as discussed above, the technique involves shielding the light (optics) for reducing undesired noise light (col. 6, line 67 through col. 7, line 12).

As to claim 3, Ogawa (figure 2) shows optics (lens group 9) for enhancing the uniformity of the signal response of the sensors (col. 7, line 65 through col. 8, line 11).

As to claim 4, Ogawa (figure 2) shows a spherical lens group (9), or an aspherical (cylindrical 32) as shown in figure 7a.

As to claims 6 and 11, Ogawa teaches having the sensors including an array of sensitive pixel elements (1).

As to claim 8, the claim is broad enough that the flow chart shown in figure 8, wherein the data computed in BUF1 and BUF2 for reforming the coordinates

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computation fairly reads on having the technique based on algorithmic processing of the generated signals.

As to claim 14, Ogawa teaches a shield, which reduces the effect of variations of the light intensity, based on other than dimensional effect.

As to independent claim 27, the apparatus of claim 27 corresponds to method claim 1 and is analyzed as previously discussed with respect to method claim 1.

As to claim 28, Ogawa shows aspherical lens (cylinder lens 32 in figure 7a).

As to claim 29, as best understood by the examiner, Ogawa teaches having a spherical lens configured to enhance the optical power (by concentrating the light from the stylus 2).

Claim 83 is similar to claim 1.

As to claim 84, it is apparent from figure of Ogawa's device that the position of the stylus 2 is detected by solving the measurement of the triangle between #R, 3L and stylus 2 which make the positioning of the stylus carried out by a polynomial function.

3. Claims 38, 46, 48, 50-53, 60, 63, 72 and 101-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogeley et al. (US patent No. 5,831,601; hereinafter referred to as Vogeley).

As to independent claim 38, Vogeley (figures 4, 6-7) teaches a method that includes receiving a light from a moving writing instrument (stylus 34) at an array of sensing elements (DMD array 30) (col. 3, lines 62-66, and col. 5, lines 5465), reading

the sensing elements in sequence to generate a sequence of signals indicative of light sensed by the elements of the array (col. 6, lines 48-65).

Vogeley does not specifically teach resetting each element after it is read and before at least some of the other elements in the array are read.

However, Vogeley shows that at the beginning of the time duration between images, and during the time period in which infrared radiation is directed towards the DMD array 30, each of the pixels is sequentially energized (i.e., moved from ON to OFF or ON to OFF) (col. 3, lines 62-66, and col. 5, lines 54-65). Therefore, turning the pixel ON can be considered to read the pixel and turning the pixel OFF can be consider resetting the pixel.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Vogeley having the pixels turned ON and OFF to be reading and resetting the pixel, so as to be able to locate the stylus with a high precision.

As to claims 46 and 48, Vogeley (figure 4) teaches an apparatus that includes a writing instrument (stylus 34) an elongated housing (screen 12), lens (22) in the housing configured to receive light from the light source and convey the light through a free-air path to optical sensors spaced from the writing instrument (col. 5, lines 9-29).

Vogeley does not specifically teach that the lens is being configured to enable light to be directed parallel to the writing surface no matter what the orientation or position of the writing instrument to the writing surface.

However, the claim is broad enough that figures 10-12 (specifically figure 12) shows that the light is parallel to the writing surface.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize from Vogeley's teaching that the light is directed parallel to the surface no matter what the orientation or position of the writing instrument to the writing surface, so as to have a unified light which in turn provide a precise location of the writing instrument.

As to claim 50, as can be seen in figure 12; the light source (general IR illumination) emits light in a direction toward a writing end of the writing instrument.

As to claim 51, as can be seen on figure 12; Vogeley teaches a conical surface (10-DMD mirror) oriented at a certain degree angle.

As to claim 53, having an LED is well known in the art to be a light source because it is reliable and affordable.

As to claims 52 and 59, the claims are substantially similar to independent claim 46 and are analyzed as previously discussed with respect to claim 46.

As to claim 60, Vogeley teaches that the angles are directly sensed by an array of sensitive elements (DMD) of sensing device (col. 4, lines 8-16, and col. 2-11 and figure 12).

As to claim 63, the claim is similar to the limitations of claim 46; Vogeley teaches the holder is the screen (12), the writing instrument (stylus 34) that is infrared (i.e., wireless).

As to claim 72, the limitations of the claim are substantially similar to claim 63, will be rejected similarly.

As to claims 101-102, the claim is similar to claim 38. Furthermore, since the applicant does not specify the sub-pixel dimension, the subdivision shown in Vogeley (figures 6-7) can be fairly considered sub-pixel.

4. Claims 107-108 and 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry.

Curry (figure 1) shows the clipboard (11), which includes clip mechanism (21) for pinning the page (14 and 20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize from Curry's teaching having a activation button to operate the clipboard, so that to facilitate pinning the papers to the clipboard.

5. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vogeley in view of Yasutake (US patent NO. 5,483,261).

Vogeley does not expressly teach having a CMOS OR CCD position sensor. However, Yasutake teaches a graphical input controller wherein CCD or CMOS camera (sensor) can be used (col. 13, lines 64-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Yasutake of using CCD or

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CMOS sensor because both are well known in the art and CCD known to be affordable and reliable.

6. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vogeley in view of Curry.

Vogeley does not teach having clip configured to attach the holder to a stake of pages.

However, Curry (figure 1) shows the clipboard (11), which includes clip mechanism (21) for pinning the page (14 and 20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize from Curry's teaching having a activation button to operate the clipboard, so that to facilitate pinning the papers to the clipboard.

7. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vogeley in view of Ogawa.

Vogeley does not teach having at least two light sensors. However, as can be seen with respect to Ogawa, that Ogawa teaches having at least two light sensors (3L and 3R).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Ogawa having a light sensors because the light sensor detection technique is known to be reliable and affordable.

8. Claims 67 and 73-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogeley in view of Shawver (US patent NO. 5,996,956).

Vogeley does not expressly teach having a holder or batteries. However, Shawver (figure 1) teaches a portable electronic device that includes a stylus and a holder (52) for holding the stylus and a battery (44) (col. 4, lines 39-50).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Shawver having a holder and batteries so as to increase the portability of the device.

9. Claims 69-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Yasutake

Ogawa (figures 1-2) teaches a method that includes conveying light from a moving light source (stylus 2) on the writing instrument (coordinate plane 1) as an indication of the location and path of the writing instrument on a two dimensional writing surface (col. 6, lines 45-55), sensing the light at two or more sensors (left-hand and right-hand detectors 3L and 3R) and generating a sequence of signals representative of the sensed light (col. 7, lines 13-42).

Ogawa does not teach CCD or CMOS array. However, Yasutake teaches a graphical input controller wherein CCD or CMOS camera (sensor) can be used (col. 13, lines 64-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Yasutake of using CCD or CMOS sensor because both are well known in the art and CCD known to be affordable and reliable.

10. Claims 76-77, 79 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Yasutake.

Ogawa (figures 1-2) teaches a method that includes conveying light from a moving light source (stylus 2) on the writing instrument (coordinate plane 1) as an indication of the location and path of the writing instrument on a two dimensional writing surface (col. 6, lines 45-55), sensing the light at two or more sensors (left-hand and right-hand detectors 3L and 3R) and generating a sequence of signals representative of the sensed light (col. 7, lines 13-42). Ogawa (figure 2) shows optics (lens group 9) for enhancing the uniformity of the signal response of the sensors (col. 7, line 65 through col. 8, line 11). Ogawa (figure 2) shows a spherical lens group (9), or an aspherical (cylindrical 32) as shown in figure 7a.

Ogawa does not teach CMOS array. However, Yasutake teaches a graphical input controller wherein CCD or CMOS camera (sensor) can be used (col. 13, lines 64-67).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Yasutake of using CCD or

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CMOS sensor because both are well known in the art and CMOS known to be reliable and provide accurate detection.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meadows (US patent NO. 5,053,757) teaches a touch panel with an adaptive noise reduction.

Junkins et al. (US patent NO. 5,525,764) teaches a laser scanning graphic input system.

Ballare et al (US patent NO. 6,124,848) teaches a method and apparatus for reducing the noise in the electrostatic pen operated digitizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703) 308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703) 305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703)872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

A handwritten signature in cursive script, appearing to read "A. A.", with a long, sweeping horizontal stroke extending to the right.

A. A
January 11, 2003